(CONT'D ON SHEET 1.01) 4/24

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM		LMS #2	3
LM		LMS #1	3
LM	LDW340-21220	ESI/LTA-1 (11)	2
LM		FMES (T)	2
PART NO. LSC300-190-7			
LM		TM2A (60)	2
LM	LDW340-52220	LTA-3 (13)	2
PART NO. LSC300-190-5			
		S/S INTEG (70)	2
LM		FC1 (FC)	2

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM		NASA (V)	4

PART NO. LSC300-190-1 | GAEC SCH NO.

PART NO. LSC300-190-3 | GAEC SCH NO. 34

GRUMMAN REL INFO

PRIM NO. 257 OK (003) ME-16T-7/9/9

SHEET REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH 1.10, 1.11, 1.12, 1.13, 1.14

SHEET / REV (SEE SHEET 1.02)

(5)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCE UNLESS SPECIFIED FRACTIONS — DEC — ANGLES ±1/64 ±.010 ±1/2°	DRAWN BY	J. CUCCARO 6-18-64	SYS. ANAL & INT	ARG 7-24-64 G. SCHEUERLEIN
	LAYOUT BY	JOE S. GO 2-5-64		
	CHECKED BY			
ORIG DWG AUTH	SUBSYS ENGR	J. RUSSELL 3-27-64		
DETAIL SPEC REQ	STRUCTURES	R. HILDERMAN		
CLASS II ENGRG CHG	VEH. DES. & INT.	J.M.R. 3-25-64 L.H. DWISBUD		
CLASS I ENGRG CHG	RELIABILITY	G.C. WIESINGER 3-30-64	S/S PROJ ENGR	J.M. LEATHER for R. CARBEE 4/7
	SPECIFICATIONS	R. BERNSTEIN 4-7-64		
SPECIFICATION CONTROL DRAWING LRE				

LINE ITEM 2 | DOCUMENTATION TYPE I

CONTRACT NO. NAS9-1100

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

ATTITUDE CONTROLLER ASSY
GUIDANCE, NAVIGATION & CONTROL SUBSYSTEM

SIZE	CODE IDENT NO.	
A	26512	LSC300-190 J

SCALE: NONE | SHEET 1.00 OF 26

ENG 77.8 7-64 THIS DWG SUPERSEDES DWG LSC300-190 REV G DATED: 3-12-68

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW340-28220	LTA-8 (18)	2
PART NO. LSC300-190-3-6			
LM		FCI (FC)	1
LM	LDW340-52220	LM-2 (32)	1
LM		NASA (V)	2
PART NO. LSC300-190-3-2			
LM		CCA*31	2

PART NO. LSC300-190-3-1 GAEC SCH NO. 34

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM		DMSM(TT)	3
	LDW340-54220	LM-14(44)	2
		LM-13(43)	2
		LM-12(42)	2
		LM-11(41)	2
		LM-10(40)	2
LM	LDW340-54220	LM-9(39)	1
PART NO. LSC300-190-3-8			
LM	LDW340-54220	LM-9 (39)	1
		LM-8 (38)	2
		LM-7 (37)	2
		LM-6(36)	2
		LM-5(35)	2
	-54220	LM-4 (34)	2
LM	LDW340-52220	LM-3 (33)	2
PART NO. LSC300-190-3-7			
LM	LDW340-21220	LTA-1R(14)	2
PART NO. LSC300-190-3-5			
LM	LDW340-51220	LM-1(31)	1
LM		FCI (FC)	1

PART NO. LSC300-190-3-3 GAEC SCH NO.

SPECIFICATION CONTROL DRAWING

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	J
SCALE NONE		SHEET 1.01	

ENG 77.26 9-66

SUPERSEDES LSC300-190 Rev G DATED 3-12-68 SH 1.01

01

NAS 9-1100

SHEET REVISION STATUS

CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER	CHG LTR	SHEET NUMBER
J	1.00	J	1.01	J	1.02										
B	1.10	B	1.11	D	1.12	D	1.13	E	1.14	G	1.15	J	1.16		
H	2.00	J	2.01												
J	3.00	H	3.01	J	3.02	J	3.03								
J	4.00														
D	5.00	D	5.01	D	5.02	D	5.03	J	5.04	J	5.05	J	5.06	J	5.07
J	6.00														

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.		
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK	A	26512	LSC300-190	J
	SCALE NONE		SHEET 1.02	

ENG 77.7 7-64

01

NAS 9-1100

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	DET SPEC	CLASS I	CLASS II	REVISIONS DESCRIPTION	CHANGED CY AND DATE	ENGRG APPD	GOVT APPD
B								REDRAWN, NEW FORMAT. LAST REVISION WAS "A" CHANGE.			
	1	3.00	–	B				REPLACED GENERAL NOTE OVER TITLE BLOCK ON SHEET 3.00 WITH NEW NOTE 5.			
	2	4.00	A-7 A-2	B				REMOVED "CONNECTOR" CALLOUT. DIM. .375±.032 WITH ASSOCIATED PICTURES.			
	3	4.00	B-3 A-7	B				REMOVED CALLOUTS "PROVISION FOR NO. 10-32NF-3B 2 REQ'D" WITH DIMENSIONS 4.937±.015, .500±.015, 2.187±.015 & ASSOCIATED PICTURES.			
	4	4.00	D-4 D-5	B				RELOCATED "NEUTRAL POSITION" CALLOUT. REMOVED ASSOCIATED 7° DIM.			
	5	4.00	C-4 C-6 D-5	B				13° ± 1° WAS 13° $^{+0°}_{-1°}$			
								(CONT ON SH 1.11)			

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.		
	A	26512	LSC 300-190	B
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK	SCALE NONE		SHEET 1.10	

ENG 77.6 7-64

01

NAS 9-1100

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	DET SPEC	CLASS I	CLASS II	REVISIONS DESCRIPTION	CHANGED BY AND DATE	ENGRG APPD	APPD
B	6	4.00	B-8 C-8	B				CONT FROM SH 1.10. ADDED CALLOUTS "P708 & P709 CONNECTORS, SEE TABLE I", "CABLES TO BE 36" ± 1/4 LONG" & "IDENTIFICATION SLEEVES ---EQUIVALENT)	T. Skowronski 1.19.65	Rel.- Hangers to be - 2/18/65 P3 Bennett 3/25/65 VPU 2-17-65	
	7	4.00	A-4 D-3	B				ADDED -3 ASSY WITH ASSOCIATED TABLE I			
	8	4.00	B-3 B-7	B				ADDED "ONE PIECE DOMED PLATE NUT 10-32 (6 REQ D) ON INSIDE OF BOX TO SUPPORT CONTROLLER" WITH ASSOC-IATED DIMENSIONS 1.343 ± .015, 1.859 ± .015, .625 ± .015, 2.125 ± .015 & 4.031 ± .015 & ASSOCIATED PICTURES.			
	9	3.00		B				ADDED NOTE 6			
	10	4.00	B-5	B				ADDED CALLOUT "FLEXIBLE BOOT" WITH ASSOC PICTURE			
	11	4.00	B-7	B				ADDED DIMENSION 5.688 MAX			
	12	4.00	B8	B				ADDED CALLOUT "DIELECTRIC SEALING --- LSP14-14201			

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.		
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK	A	26512	LSC 300-190	B
	SCALE NONE			SHEET 1.11

ENG 77.6 7-64

01

NAS 9-1100

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	DET SPEC	CLASS I	CLASS II	REVISIONS DESCRIPTION (CONT FROM SHT. 1.11)	CHANGED BY AND DATE	ENGRG APPD	APPD
	1	1.00						ADDED EFFECTIVITIES FOR -1 & -3, ADDED -5 & -7 AND EFFECTIVITIES. ADDED SHT. 1.12	P. TAORMINA 12/29/65		
	2	2.00						ADDED -5, -7 & I&T REQTS PER LVC 300-019-018			
C	3	3.00						ADDED NOTES 7, 8, 9 & 10. IN NOTE 5: ADDED -5 & -7 AND LSP-300-19A (-3) WAS LSP-300-19A			
	4	4.00	D-3 A-5					IN TABLE I: FOR -3 LSC 390-8-411511 WAS LSC 390-8-411411, LSC 390-8-405711 WAS LSC 390-8-407611, & ADDED -7 (PER LVC 300-019-010). ADDED -5			
	5	4.00	C-4 C-6 C-7					"HANDLE SHAPE" AS PER MSCSE AE-000681 REV C WAS: ..." AS PER MSC-CF30-01 (PER LVC-300-019-003). ADDED "TRIGGER TYPE" TO COMMUNICATION SWITCH.			
	6	4.00	B-7 A-5 B-2					RELOCATED MOUNTING HOLES (6) PER LVC 300-019-009 REMOVED DIMENSIONS .437±.015, 3.125±.015, 1.343±.015 1.359±.015, 4.031±.015, .625±.015, 2.125±.015 & ASSOC. HOLES REMOVED ONE PIECE DOMED PLATE NUTS (6).			
D	1	1.00 1.01 1.02 1.13 5.00 THRU 5.07 3.01						SHEET 1.00 OF 19 WAS SHEET 1.00 OF 7. ADDED SHS. 1.01, 1.02, 1.13, 3.01, 5.00, 5.01, 5.02, 5.03, 5.04, 5.05 5.06 & 5.07, WITH -1 SCHEMATIC & ACA DATA. ON -1 EFF. 5/5 INTEG(70) WAS ESI, FCI (FC) WAS FC. ON -5 LTA-3(13) WAS LTA-3, TM2A(15) WAS TM-2. ON -7 ESI/LTA-1(11) WAS FCI & FMES(T) WAS FMES. ON -3 ADDED NEXT ASSY NO'S. LTA-8(18) WAS LTA-8, LTA-1(R)(14) WAS LTA-1 PH3. LEM-1 THRU -11 EFF FOR -3 WERE ON SHEET 1.00 ONLY. REMOVED SH. NO'S FROM SH. REV STATUS BLOCK. ADDED TO SH. 1.02	A. ANDRIANI 20 APRIL 66 EGR		

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.		
	A	26512	LSC 300-190	D
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK	SCALE NONE		SHEET 1.12	

ENG 77.6 7-64

01

NAS 9-1100

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH DWG LTR	DET SPEC	CLASS I	CLASS II	REVISIONS DESCRIPTION	CHANGED BY AND DATE	ENGRG APPD	~~CHGE~~ APPD
E	1	1.00 1.001 1.002 2.00 3.00 4.00 5.04 5.05 5.06 5.07						SH 1.00 OF 20 WAS SH 1.00 OF 19 ADDED SH 1.14. ADDED -3-1 & -3-2. REMOVED THE FOLLOWING EFF.'S FROM -3 : DMSM, FCI, CCA #31, LTA-1(R) LTA-8, LEM-1 THRU LEM-11 & SPARES. FOR -3 EFF: NASA(1), QTY 4, WAS NASA, QTY 6. FOR -5, LTA-3 N/A WAS LDW340-28220	J LONG 13 OCT. 66		
	2	2.00						FOR -3 : DELETED VENDOR P/N(CG163G1) AND DWG NO.(CG163G1(QUAL.)).			
	3	3.00						NOTE 5 : SPEC NO. LSP300-19B WAS LSP300-19A(-4)			
	4	3.01						ADDED NOTES 13 & 14 PER LVC300-019 -034, -039 RESPECTIVELY.			
	5	4.00	8B					CALLOUT : DIELECTRIC SEALING (POTTING) WAS DIELECTRIC SEALING (POTTING) SHALL BE IN ACCORDANCE WITH GAEC SPEC LSP14-14201.	7A		

GR. LEADER
SUBSYSTEM
RELIABILITY
SPECIFICATIONS
VR/TASK FORCE
PROJECT
RELEASE

SPECIFICATION CONTROL DRAWING

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	E
SCALE NONE		SHEET 1.14	

ENG 77.6 7-64

01

NAS 9-1100

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHNG LTR	DET SPEC	CLASS I	CLASS II	REVISIONS DESCRIPTION	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
T1	1	1.00 1.01 1.02 1.15 2.00 3.00 3.02 3.03 4.00 5.04 5.05 5.06 5.07 6.00	AND 4A					SHEET 1.00 OF 23 WAS SHEET 1.00 OF 20 ADDED SHEETS 1.15, 3.02, 6.00 & NOTES 15, 16, 17 & 18. ON -3-2 REMOVED EFF "SPARES". FCI(FC) QTY WAS "2" LTA-8 & LEM-1 ; ADDED -3-3 ASSY .	H. Lee 4-13-67		
	2	4.00	5C					IN CALLOUT "MSCSD-AE-000681 REV C" WAS "MSCSE-AE-000681 REV C".			
	3		3A					FROM CALLOUT "MTG SURFACE" REM "(SEE NOTE 13)"			
	4	3.01						IN NOTE 11 ADDED "LDW340-52220" ;	WSG		
								(6) F1 THRU F4 (REF LCD NO. 1551)			
G1		1.00 1.01 1.02 1.15 2.00 3.00 3.02 3.03 4.00 5.04 THRU 5.07 6.00	4A					SH 1.00 24 WAS 1.00 OF 23 ADDED SH 3.03 ADDED -3-4 & -3-5. FOR -3-2 EFF: LM-2 QTY WAS 2, REMOVED LTA-1(R), LM-3 THRU LM-15. ADDED NOTES 19, 20, 21, & 22. ON EQUIPMENT CONFIGURATION MATRIX FOR -1, -3, -5, -7, -3-1, -3-2 & -3-3 ADDED NOTES 19, 20, 21. (7) REF. LCD 2223 (CCA 745), LCD 2249 (CCA 726) & LCD 2589 (CCA 578)	J. LONG 13 FEB 1968	GR LEADER JPK 2/26/68 SUBSYSTEM RELIABILITY SAFETY/HUMAN FACTORS VIBRATIONS TASK FORCE PROJECT RELEASE	

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.	LSC300-190	
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK	A	26512		G
	SCALE NONE		SHEET 1.15	

ENG 77.6 7-64

01

NAS 9-1100

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	DET SPEC	CLASS I	CLASS II	REVISIONS DESCRIPTION	CHANGED BY AND DATE	ENGRG APPD	SQWS APPD
								RETRACED SH 1.00, 1.01, 3.00, 5.05, 5.06, 5.07 NO CHG, LAST REV WAS "G".	GRV 10/16/68		
H	1	1.00 1.01 1.02 1.16 2.00 2.01 3.00 3.01 3.02 3.03 4.00 5.04 5.05 5.06 5.07 6.00				✓	(P)	SH 1.00 OF 26 WAS 1.00 OF 24, ADDED SHEETS 1.16 & 2.01 DELETED -3-4. ADDED -3-6 EFF FOR LTA-8. -3-5 EFF WAS DMSM (77), LM-5 THRU LM-15 & LTA-1R. REMOVED LTA-8 FROM -3-3. ADDED -3-7 EFF FOR LM-3 THRU LM-15 (2 EA) & DMSM (77) (1). NOTE 19 ADDED LVC'S (-057, -057A, -063A) ADDED NOTES 23 & 24. DELETED NOTE 22. ON EQUIPMENT CONFIGURATION MATRIX FOR -1, -3, -5, -7, -3-1, -3-2, -3-3 & -3-5 ADDED NOTE 23. IN NOTE 11 ADDED DWG. LDW340-54220 (REF LCD 3207C ECP # C-120E; CCA 1426 & AMEND. 1) JKARTZMAR 9R	G.R.VAN NESS 10-16-68		
								SH 4.00 RETRACED; NO CHANGE, LAST REV "H"	RFS 10/23/68		
J	1	1.00 1.01 6.00				✓		ON -3-7 DELETED EFF LM-10 THRU LM-14 & DMSM AND QUANTITY 1, WAS 2 FOR LM-9. ADDED -3-8 TO 'MOD BLOCK', NOTES & FLD. LCD 3813	BOB STROHMENGER 6-23-69		
	2	1.02 2.01 3.00 3.01 3.02 3.03 4.00 5.04 5.05 5.06 5.07	4A3J			✓		ON -3-7 DELETED EFF LM-15, N/A LDW340-54220 ADDED NOTE 25. LCD 3813, LCD 3587	COG. ENGR 7/8/69 GRP. LEADER JPK 7-8-69 RELIABILITY SPECIFICATIONS 7/8/69 SUBSYS/PROJ. 7/8/69 RELEASE 7-9-69		
	3	3.02 3.03		(P)	M	✓		DELETED NOTE 19 & CALLOUT "SEE NOTE 19." SPEC. NO. FOR -3-6, -3-7, WAS LSP 300-19B. JKartzmar D.H.			

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.	LSC 300-190	J
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK	A	26512		
	SCALE NONE		SHEET 1.16	

ENG 77.6 7-64

01

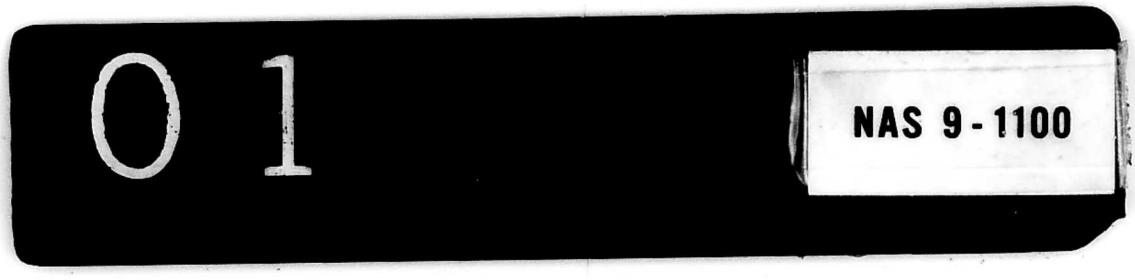
NAS 9-1100

VENDORS LISTED ARE ACCEPTABLE SOURCE/S

GAEC SPECIFICATION CONTROL DRAWING & DASH NUMBERS	I & T	VENDORS NAME ADDRESS - CODE IDENT & PART NUMBERS	VENDOR DRAWINGS NUMBER AND REVISIONS	VENDOR DRAWINGS ITEM WEIGHT (LBS)			IDENTIFICATION & TRACEABILITY REQTS PER LSP-14-007
LSC 300-190-1	S	FCG163B1 FCG163A1	FCG163B1 FCG163A1	5.03 (MAX)			PARA 3.5.2
-3	S	DCG163E1 ~~CG163G1~~	DCG163E1 (PROTO) ~~CG163G1 (QUAL)~~	4.75 (MAX)			ALL
-5	E	FCG163C1	FCG163C1	5.03 (MAX)			PARA 3.5.2
-7	S	DCG163D1	DCG163D1	5.03 (MAX)			PARA 3.5.2
-3-1	S	DCG163E2	DCG163E2	4.75 (MAX.)			ALL
-3-2	S	DCG163E3 DCG163E3	DCG163E3 (PROTO) DCG163E3 (QUAL)	4.75 (MAX.)			ALL
-3-3	S	DCG163E4	DCG163E4	4.75 (MAX)			ALL
~~-3-4~~	~~S~~	~~DCG163E6~~	~~DCG163E6~~	~~4.75 MAX~~			~~ALL~~
-3-5	S	DCG163E7	DCG163E7	4.75 (MAX)			ALL
		AERONAUTICAL DIVISION HONEYWELL INC. MINNEAPOLIS, MINN. CODE IDENT. NO. 94580					

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.	LSC 300-190	H
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK	A	26512		
	SCALE NONE			SHEET 2.00

ENG 77.8 7-64



VENDORS LISTED ARE ACCEPTABLE SOURCE/S

GAEC SPECIFICATION CONTROL DRAWING & DASH NUMBERS	I&T	VENDORS NAME ADDRESS - CODE IDENT & PART NUMBERS	VENDOR DRAWINGS				IDENTIFICATION & TRACEABILITY REQ. PER PARA.
			NUMBER AND REVISIONS	ITEM WEIGHT			
LSC300-190-3-6	S	DCG163E8	DCG163E8	4.75 (MAX)			ALL
LSC300-190-3-7	S	DCG163E9	DCG163E9	4.75 (MAX)			ALL
LSC300-190-3-8	S	DCG163E11	DCG163E11	4.75 (MAX)			ALL
		AERONAUTICAL DIV., HONEYWELL, INC. MINNEAPOLIS, MINN. CODE IDENT. NO. 94580					

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH LSP-14-007

SPECIFICATION CONTROL DRAWING	SIZE	CODE IDENT NO.	LSC300-190	J
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK	A	26512		
	SCALE NONE			SHEET 2.01

ENG 77.8 10-64

01

NAS 9-1100

NOTES:

1. DELETED

2. DELETED

3. DELETED

4. AXES X, Y & Z REPRESENT VEHICLE AXES.

5. THIS SPECIFICATION CONTROL DWG AND GRUMMAN SPECIFICATION LSP-300-19 WITH REVISIONS AND AMENDMENTS AS NOTED ESTABLISH THE COMPLETE REQUIREMENTS FOR THE FOLLOWING PARTS:

~~(SEE NOTE 19)~~

DASH NO.	NOMENCLATURE	SPEC NO.
-1, -3, -5, -7	ATTITUDE CONTROLLER ASSY	LSP-300-19B
-3-1,-3-2,-3-3,~~-3-5~~	ATTITUDE CONTROLLER ASSY	LSP-300-19B
~~-3-5~~,-3-6,-3-7	ATTITUDE CONTROLLER ASSY	LSP-300-19C
-3-8	ATTITUDE CONTROLLER ASSY	LSP-300-19C

6. FLIGHT CONNECTORS TO BE FURNISHED BY OR THROUGH GRUMMAN AIRCRAFT ENGR. CORP.

7. THE COLOR OF THE ACA HOUSING SHALL BE MEDIUM GREY VELVET (MINN. MINING 3M401-B2, APPROX. VISUAL MATCH FED. STD. 595 #36231 BAKED AT 160°F FOR 6 HOURS).

8. THE COLOR OF THE ACA HANDLE SHALL BE GREY (MINN. MINING 3M401-B3, APPROX. VISUAL MATCH FED. STD. 595 #36440).

9. THE COLOR OF THE ACA BOOT SHALL BE A DULL GREY NOT TO EXCEED 44% REFLECTANCE.

10. THE ACA TRIGGER SHALL BE BLACK ANODIZED PER MIL-A-8625A (TYPE II).

(CONTINUED ON SH 3.01)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	J

SCALE NONE | SHEET 3.00

SPECIFICATION CONTROL DRAWING

ENG 77.9 7-64

SUPERSEDES LSC300-190 REV G, DATED 3-12-68

01

NAS 9-1100

NOTES (CONT'D FROM SHEET 3.00)

11. FOR HOLES MARKED ▲ SEE LDW340-28220, LDW340-52220 & LDW340-54220 FOR CORRESPONDING HOLE PATTERN (FOR GAEC. INFO ONLY).

12. ⊕ DENOTES CENTER OF GRAVITY NOT FOR INSPECTION PURPOSES

13. -3-2 SPEC. CONFIGURATION CONTAINS NEW STYLE LINEAR TRANSFORMER, AND CHANGES AFFECTING MECHANICAL OPERATION AND CLEARANCES.
-3-1 SPEC. CONFIGURATION CONTAINS NEW STYLE LINEAR TRANSFORMER ONLY.
-3 CONFIGURATION WITHOUT EITHER OF ABOVE CHANGES NOT REQ'D TO MEET ENVIRONMENTAL SPEC. AND RESTRICTED FOR USE AS NON-FLIGHT ARTICLES ONLY. (REF. LVC300-019-034).

14. UPPER LIMIT OF SOFT STOP TORQUE, INDICATED AS 21.6 INCH-LBS MAX. IN TABLE VIII OF LSP-300-198 FOR THE YAW AXIS, MAY BE 23.0 INCH-LBS MAX. FOR ALL LSC300-190-3 ATTITUDE CONTROLLER ASSY'S (NON-FLIGHT SIMULATORS) ONLY. LSC300-190-3-1 & -3-2 ATTITUDE CONTROLLER ASSY'S TO BE GOVERNED BY 21.6 INCH-LBS MAX. PER SPEC. REQUIREMENT. (REF. LVC300-019-039.)

	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
SPECIFICATION CONTROL DRAWING	SIZE A	CODE IDENT NO. 26512	LSC300-190	H (H)
	SCALE NONE			SHEET 3.01

ENG 77.9 7-64

01

NAS 9-1100

NOTES : (CONT'D FROM SHEET 3.01)

15. ATTITUDE CONTROLLER ASSEMBLIES ARE MASS REPRESENTATIVE MODELS WHICH ARE INOPERABLE AND ARE EXEMPT FROM THE FUNCT-IONAL REQUIREMENTS OF LSP300-19.

16. ATTITUDE CONTROLLER ASSEMBLIES ARE EXPERIMENTAL MODELS. THESE UNITS ARE NOT REQUIRED TO MEET "APPROVED PARTS, SWITCH ACTUATION, WEIGHT OR ENVIRONMENTAL CONDITION" REQUIREMENTS OF LSP-300-19.

17. ATTITUDE CONTROLLER ASSEMBLIES ARE SERVICE TEST MODELS AND ARE NOT REQUIRED TO MEET "ENVIRONMENTAL CONDITIONS, APPROVED PARTS OR WEIGHT" REQUIREMENTS OF LSP-300-19.

18. THESE UNITS CONTAIN SWITCHES WITH AN INITIAL RELEASE FORCE OF LESS THAN 4.5 OUNCES. THEY ARE NOT EXPECTED TO MEET 15,000 MINIMUM SWITCH ACTUATION REQUIREMENT OF PARA 3.8.3 "OPERATING LIFE" OF LSP-300-19.

~~19. LSP-300-19B REQUIREMENTS ARE SUPPLEMENTED BY THE FOLLOWING LM VENDOR CHANGE NOTICES: LVC 300-019-045, -049, -057, -057A, -063A~~

20. THESE UNITS NEED NOT MEET THE ACCEPTANCE VIBRATION REQUIREMENTS OF LSP-300-19B AS REVISED BY LVC 300-019-049 AND ARE RESTRICTED TO NON-FLIGHT VEHICLES.

(CONT ON SHEET 3.03)

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
SIZE	CODE IDENT NO.	LSC300-190	J
A	26512		
SCALE NONE		SHEET 3.02	

SPECIFICATION CONTROL DRAWING

ENG 77.9 7-64

01

NAS 9-1100

NOTES : (CONT FROM SH. 3.02)

21. THESE UNITS DO NOT REQUIRE NON-FLAMMABLE CABLE SHEATHING AS SPECIFIED IN PARA 3.4.2 OF LSP-300-19. THE LTA-8 UNITS REQUIRE ADDITION OF NON-FLAMMABLE CABLE SHEATHING AT INSTALLATION.

22. ~~THESE UNITS SHALL HAVE ONLY NON-FLAMMABLE CABLE SHEATHING WHEN INSTALLED ON LDW340-52220.~~

23. THESE UNITS NEED NOT MEET THE ACCEPTANCE THERMAL VACUUM REQUIREMENTS OF LSP-300-19B AS REVISED BY LVC300-019-057 AND ARE RESTRICTED TO NON-FLIGHT VEHICLES.

24. THESE UNITS HAVE UNDERGONE ONLY PARTIAL RECALIBRATION AFTER THERMAL VACUUM TESTS PER LVC300-019-057 AND ARE RESTRICTED TO NON-FLIGHT VEHICLES.

25 THE -3-8 UNITS CONTAIN AN IMPROVED PITCH AXIS CENTERING SPRING. THE -3-7 & -3-8 UUITS ARE COMPLETELY & MUTUALLY INTERCHANGEABLE IN ALL VEHICLES.

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	J
SCALE NONE		SHEET 3.03 OF	

ENG 77.9 REV 7-67

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LSC300-190J

SUPPLEMENTARY DATA
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED (✓) APPLY TO THIS DWG

- MARK PART NUMBER IN ACCORDANCE WITH MIL STD 130
- PART NUMBER: ON ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY
- LENGTHS OF AN, MS & NAS AL ALY RIVETS SHORTER THAN 1 INCH ARC NOT SPECIFIED
- INSTALL RIVETS IN ACCORDANCE WITH

CABLES TO EXIT WITHIN THIS AREA (APPROX 2 1/2" x 1 1/2")

TABLE I

DASH NO.	CONNECTOR REF DESIGN	CONNECTOR	MODEL	L' ± 1/2"
-1	P108	DEUTSCH 22007-22-41P-004	PRE PRODUCTION	3⅛
	P109	DEUTSCH 22007-22-21P-004		3⅛
-3, -3-1, -3-2, -3-3, -3-5, -3-6, -3-7, -3-8	P108	LSC390-8-41151 (SEE NOTE 6)	PRODUCTION	1 13/14
	P109	LSC390-8-40511 (SEE NOTE 6)		1 6 1/8
-5	P108	BENDIX PTO6SE-22-41P(302)	TEST MODEL	3⅛
	P109	BENDIX PTO6E-22-21P(SR)		3⅛
-7	P108	BENDIX PTO6P-22-41PW	PRE PRODUCTION	3⅛
	P109	BENDIX PTO6P-18-32P		3⅛

(J2)

+YAW
YAW PIVOT
13°±1°
NEUTRAL POSITION
13°±1°
-YAW
2.000±.250
4.000±.032
"L"
SEE TABLE I

NEUTRAL POSITION
+X AXIS
13°±1°
13°±1°
COMMUNICATION SWITCH TRIGGER TYPE
PITCH PIVOT
P108 & P109 CONNECTORS SEE TABLE I
HANDLE SHAPE AS PER MSCSD-AE-000681 REV C
DIELECTRIC SEALING (POTTING)
+PITCH
-PITCH
IDENTIFICATION SLEEVES (KYNAR SHRINK SLEEVING OR EQUIVALENT)
5.438 MAX
4.000 +.000 -.125 (IN PLANE OF YAW AXIS)
FLEXIBLE BOOT
EXTENSION FOR CABLE HARNESS
.375±.015
3.000±.010
.880±.250
ROLL AXIS
+Z AXIS
(SEE NOTE 12) 1/4 ± 1/4
.800±.010
▲#10-32 NF-2(Q) BLIND TAPPED HOLES FULL THREAD .38 MIN (SEE NOTE 11)
1.000±.015
1.300±.010
(SEE NOTE 12) 3/4 ± 1/4
1.500±.032
4.375±.031
1.500±.032R
1.500±.032R
.437 MAX
10°
YAW AXIS
6.250±.032
2.125±.125

13°±1°
NEUTRAL POSITION
13°±1°
FOR COLOR REQUIREMENTS SEE NOTES #7,8,9, & 10
PITCH AXIS
ROLL PIVOT
+Y AXIS
-ROLL
+ROLL
MTG SURFACE
IDENTIFICATION PLATE
MTG SURFACE
2±1/4
SEE NOTE 12

ATTITUDE CONTROLLER ASSY
LSC 300-190-1, -3, -3-1, -3-2, -3-3, -3-5, 3-6, -3-7, -3-8, -5, -7 } SEE TABLE I

(J2)

SPECIFICATION CONTROL DRAWING
GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE, NEW YORK 11714

SIZE	CODE IDENT NO.		
D	26512	LSC300-190	J

SCALE 1/1 SHEET 4.00

ENG 733 REV. 547

2 SUPERSEDES LSC 300-190 REV "H" 1-22-69

LSC300-190 J

01

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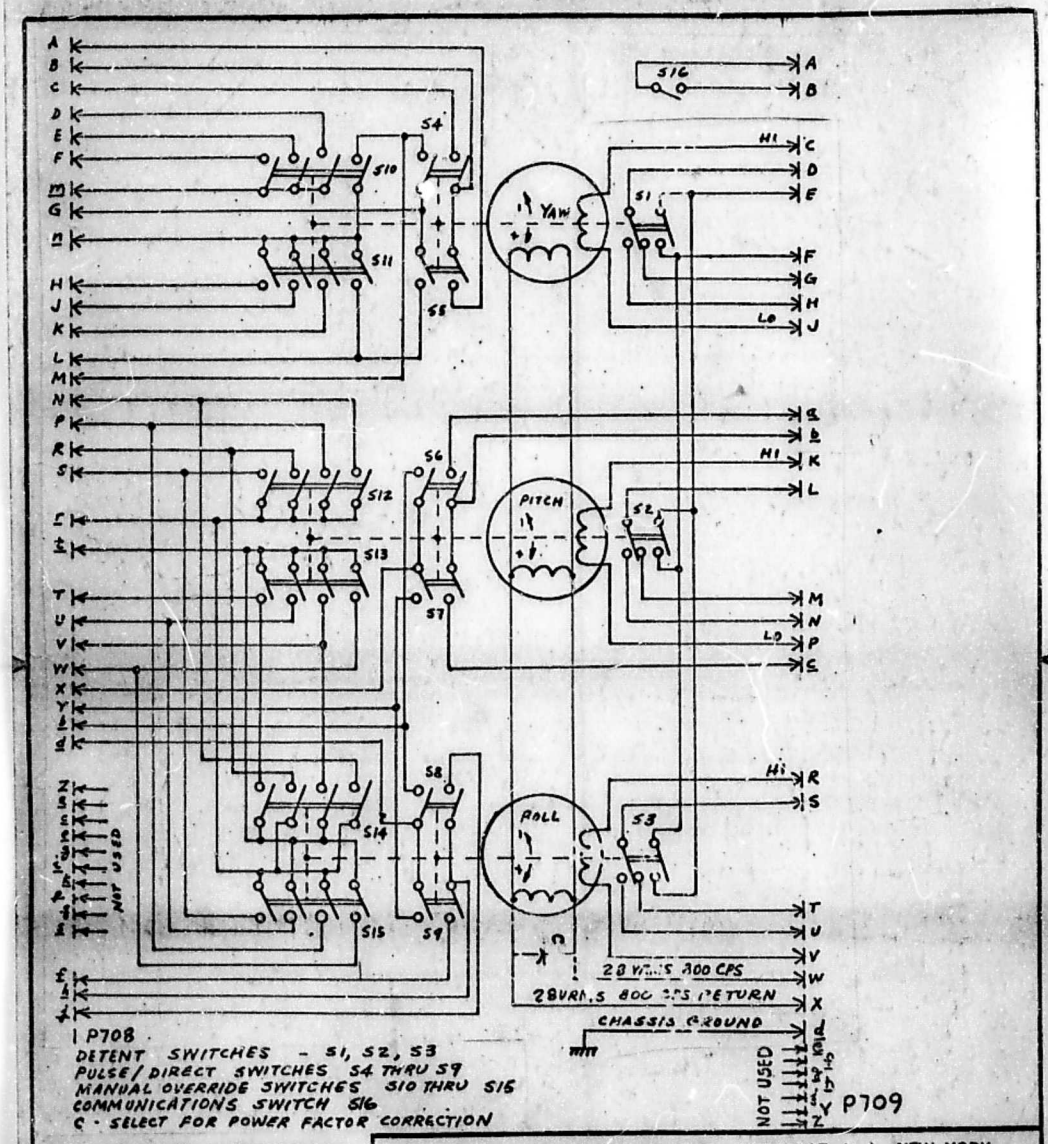

SCHEMATIC DIAGRAM
LSC300-190-7,3
~~-3-1,-3-2,3-3,-3-5,-3-6,3-7,-3-8~~

SPECIFICATION CONTROL DRAWING

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
A	26512	LSC 300-190	J
SCALE NONE		SHEET 5.04	

ENG 77.9 7-64

THIS IS AN ORIGINAL DWG

01

NAS 9-1100

ACA Interface Data LSC-300-190-3,-3-1,-3-2,-3-3,-3-5,-3-6,-3-7,-7 Connector P 708
-3-8

Pin	Function	Wire Info.	AWG Wire Size	Remarks
f	+Roll Pulse Excit. or Direct Output (S9)	Twist	20	
h	+Roll Pulse Output or Direct Excit (S8 & 9)			
j	- Roll Pulse Excit. or Direct Output (S8)			
X	±Pitch Direct Excit.(S6 & 7)	Twist		
Y	+Pitch or +Roll direct output (S7 & 9)			
b	-Pitch or -Roll Direct Output (S6 & 8)			
d	±Roll Direct Excit (S8 & 9)			
A	+Yaw Pulse excit or direct Output (S5)	Twist		
B	± Yaw Pulse Output or direct excit. (S4 & 5)			
C	-Yaw Pulse excit or direct Output (S4)			
D	-Yaw Manual override output (S10)	Twist		
E	-Yaw Manual override output (S10)		20	
F	-Yaw Manual override output (S10)		20	
m	-Yaw Manual override Excit (S10)(28VDC)		18	
G	±Yaw Direct Excit (S4 & 5) (28 VDC)		20	
n	± Yaw Manual Override excit (S10 & 11)(28 VDC)		18	
H	+Yaw Manual Override output (S11)	Twist	20	
J	+Yaw Manual Override output (S11)			
K	+Yaw Manual Override output (S11)			
L	+Yaw Manual Override (S11) or direct (S5) output			
M	-Yaw Direct (S4) or manual over. output (S10)			
N	-Pitch or -Roll manual override output (S12 or 14)	Twist with R, S, r	20	
P	-Pitch or +Roll manual override output (S12 or 15)			

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	J

SPECIFICATION CONTROL DRAWING

SCALE NONE SHEET 5.05

ENG 77.8 7-64 SUPERSEDES LSC300-190 REV G 3-12-65

01

NAS 9-1100

ACA Interface Data LSC-300-190-3,-3-1,-3-2,-3-3,-3-5,-3-6,-3-7,-7 Connector P 708
-3-8

Pin	Function	Wire Info.	AWG Wire Size	Remarks
R	-Pitch or -Roll manual override output (S12 or 14)	Twist with N & P	20	
S	-Pitch or +Roll manual override output (S12 or 15)		20	
r	-Pitch and ±Roll Man. over excit.(S12, 14 & 15)(28VDC)		18	
t	+Pitch & ±Roll Man. over excit (S13, 14 & 15)(28VDC)		18	
T	+Pitch or -Roll Manual override output (S13 or 14)		20	
U	+Pitch or +Roll Manual Override Output (S13 or 15)	Twist		
V	+Pitch or -Roll Manual Override Output (S13 or 14)			
W	+Pitch or +Roll Manual Override Output (S13 or 15)		20	
Z	Spare			
a	Spare			
c	Spare			
e	Spare			
g	Spare			
i	Spare			
k	Spare			
p	Spare			
q	Spare			
s	Spare			

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	J

SPECIFICATION CONTROL DRAWING

SCALE NONE SHEET 5.06

SNG 77.8 7-64 SUPERSEDES LSC 300-190 REV G 3-12-68

01

NAS 9-1100

ACA Interface Data LSC-300-190-3,-3-1,-3-2,-3-3,-3-5,-3-6,-3-7,-7 -3-8 Connector P 708

Pin	Function	Wire Info.	AWG Wire Size	Remarks
a	-Pitch Pulse excit or direct Output (S6)	Twist	20	
b	±Pitch Pulse output or direct Excit. (S6 & S7)	Twist	20	
c	+Pitch Pulse excit. or direct Output (S7)	Twist	20	
d	Chassis Ground		22	
A	Communications Switch (Hi) (S16)	Twist		
B	Communications Switch (Lo) (S16)	Twist		
E	Detent Switch Output (Hi) (S1 or S2 or S3)	Twist		
F	Detent Switch Output (Lo) (S1 or S2 or S3)	Twist		
W	28 VRMS 800 cps Excit. (Hi)	Twist		
X	28 VRMS 800 cps Excit.(Lo)	Twist		
C	Yaw Transducer Output (Hi)	Twist		
J	Yaw Transducer Output (Lo)	Twist		
G	Yaw Detent Switch (S1)	Twist		
H	Yaw Detent Switch (S1)	Twist		
D	Yaw Detent Switch (S1)	Twist		
K	Pitch Transducer Output (Hi)	Twist		
L	Pitch Detent Switch (S2)	Twist		
M	Pitch Detent Switch (S2)	Twist		
N	Pitch Detent Switch (S2)	Twist		
P	Pitch Transducer Output (Lo)	Twist		
R	Roll Transducer Output (Hi)	Twist		
S	Roll Detent Switch	Twist		
T	Roll Detent Switch	Twist		
U	Roll Detent Switch	Twist		
V	Roll Transducer Output (Lo)	Twist	22	
Y	Spare			
Z	Spare			
c	Spare			
f	Spare			
g	Spare			
h	Spare			
j	Spare			

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SPECIFICATION CONTROL DRAWING

SIZE	CODE IDENT NO.		
A	26512	LSC300-190	J

SCALE NONE SHEET 5.07

ENG 77.8 7-64 SUPERSEDES LSC300-190 REVG 3-12-68

01

NAS 9-1100

LSC300-190	DASH NUMBER -1	-3	-5	-7	-3-1	-3-2	-3-3	-3-4	-3-5	-3-6	-3-7	-3-8
TYPE	NOTE NUMBER											
PARTS	16	13	15	17	13	13	18				25	25
PERFORMANCE	16, 20, 23	13, 14, 20 23	15, 20 23	17, 20 23	13, 14, 20 23	20 23	18, 20 23		23			
PROCESS & QUAL CONT	16, 21	21	15, 21	17, 21	21	21	21	22		24		
CONNECTOR & WIRING (SEE SHEET 5.00 THRU 5.07)		6			6	6	6	6	6	6	6	6
FORM & FIT	(SEE TABLE I)											
OTHERS	4,5,7,8, 9,10, 12,18	4,5,7,8, 9,10, 12,18	4,5,7,8, 9,10,11, 12,18	4,5,7,8 9,10, 12,18	4,5,7,8, 9,10, 12,18	4,5,7,9, 10,11,12, 8,18	4,5,7,8, 9,10,11, 12,18	4,5,7,8 9,10,11 12,18	4,5,7,8, 9,10,11 12,18	4,5,7,8 9,10,11,12 18	4,5,7,8 9,10,11,12 18	4,5,7,8, 9,10,11,12

EQUIPMENT CONFIGURATION MATRIX
DRAWING NOTES APPLICABLE TO PART NUMBERS AS INDICATED

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LSC300-190	J

SCALE NONE SHEET 6.00

ENG 72.1 9-64

01

NAS 9-1100